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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/578,871

05/11/2006

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060347

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23850 7590 12/08/2009  
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EXAMINER

UHLIR, CHRISTOPHER J

ART UNIT

PAPER NUMBER

2832

MAIL DATE

DELIVERY MODE

12/08/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/578,871 | <b>Applicant(s)</b><br>SATO, HIROSHI |  |
|                              | <b>Examiner</b><br>CHRISTOPHER UHLIR | <b>Art Unit</b><br>2832              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 9-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

Receipt is acknowledged of applicant's amendment filed August 17, 2009.

Claims 1-6 and 9-15 are pending and an action on the merits is as follows.

Applicant's arguments, see page 9 lines 1-3 of response, filed August 17, 2009, with respect to the rejection(s) of claims 1-6, 9, and 10 under 35 U.S.C.102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art references.

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-6 and 9-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claims 1 and 4** include the limitation "detecting whether a key is already depressed at a time when a played key different from the depressed key is played". By definition, a depressed key is a key which was previously actuated to be in a depressed state. Therefore a depressed key would always be depressed before a played key

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different from the depressed key is played. It is unclear how an already depressed key would not be depressed when a different key is played. For examining purposes, this limitation is interpreted as stating “detecting whether a first key is already depressed at a time when a played key different from the first key is played”.

**Claims 2, 3, 5, 6, 9, and 10** depend on claims 1 or 4 and therefore inherit all claimed limitations of the base claims. These claims do not further clarify the deficiencies of claims 1 or 4.

**Claim 11** pertains to a method of generating resonance and includes the limitation “determining whether a depressed key is already depressed at the time the key-on event”. Since this claim is a method claim, the sequence of the claimed steps should be performed in order. By definition, a depressed key is a key which was previously actuated to be in a depressed state. Therefore it is unclear how an already depressed key cannot be depressed at the time of the key-on event which is detected. For examining purposes, this limitation is interpreted as stating “determining whether a first key was already depressed at the time of the key-on event”.

**Claims 12-15** depend on claim 11 and therefore inherit all claimed limitations of the base claims. These claims do not further clarify the deficiencies of claim 11.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 9-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Haruyama (US 6,118,065).

**Regarding claims 1 and 4**, Haruyama discloses a resonance generation device and method of an electronic musical instrument including a keyboard (2C) typically having keys (column 2 lines 27-30), and a digital signal processing unit (control unit), for artificially creating a resonance (column 2 lines 4-12). A key depression detector (key depression detecting circuit 2D) is disclosed to detect the depression of keys (column 10 lines 1-8), and further detects whether a first key is already depressed at a time when a played key different from the first key is played (column 26 lines 61-65). It should be noted that keys on a keyboard are typically played when not all remaining keys are depressed simultaneously. A specific relation detector is disclosed to detect a specific relation (time difference) between played keys and depressed keys and a musical sound generator generates a predetermined musical sound (deadened and regenerated tone) based on the specific relation between said played key and the first key (column 26 lines 61-65).

**In reference to claims 9 and 10**, Haruyama discloses a method as stated above, further including a computer program product including a computer readable recording medium for executing the resonance generation method (column 7 lines 14-17).

**In reference to claim 11**, Haruyama discloses a resonance generation device and method of an electronic musical instrument including a keyboard (2C) typically

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having keys (column 2 lines 27-30), and a digital signal processing unit (control unit), for artificially creating a resonance (column 2 lines 4-12). An occurrence of a key-on event of a played key is detected through key depression detecting circuit (2D) (column 10 lines 1-8). This reference further discloses detecting whether a first key was already depressed at the time of a key-on event, and if so, a strings resonance process is performed in which it is determined whether the played key and the first key are in a specific relation (thirty second time interval) set in advance where a predetermined musical sound (deadened and regenerated tone) is generated based on the specific relation (column 26 lines 61-65). If no key other than the played key is depressed than a normal sound generating process for the played key is performed (column 4 lines 6-10), as is typical in the art.

**In reference to claims 12-14**, Haruyama discloses a method as stated above, which further detects the depression of any new key (including a second and third key) (column 10 lines 1-5). If a key is already depressed at the time of a key-on event, a strings resonance process is performed and a predetermined musical sound is generated based on a specific relation (time interval) between the depressed key and the played key. It is further disclosed that a player can depressed a plurality of keys, including a second and third key, in succession (column 5 lines 7-18), and that the strings resonance process can be applied to any number of depressed keys (column 31 lines 31-35).

**In reference to claim 15**, Haruyama discloses a method as stated above, where a volume of the resonance is controlled as a function of the specific relation between the first key and the played key (column 26 line 61 through column 27 line 2).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haruyama (US 6,118,065) in view of Matsuda et al. (US 6,316,711 B2).

**In reference to claims 2 and 5**, Haruyama discloses a device and method as stated above, but fails to disclose the musical sound generator to generate a monaural resonance outputted from left and right speakers with a respective volume in accordance with the position of the depressed key to make sound generation position panning.

However Matsuda et al. teaches a resonance generation device and method of an electronic musical instrument, where a musical sound generator generates a monaural resonance outputted from left and right speakers (column 3 lines 23-29). This reference further shows that the generated resonance is outputted with a respective volume in accordance with the position of a depressed key so as to make sound generation position panning (column 4 lines 8-14).

Since these references pertain to a resonance generation device and method of an electronic musical instrument, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device and method disclosed by Haruyama with providing the musical sound generator to generate a monaural resonance outputted from left and right speakers with a respective volume in accordance with the position of the depressed key to make sound generation position panning as taught by Matsuda et al. Doing so would provide a predetermined sound image which corresponds to the depressed key, as stated in Matsuda et al. (column 4 lines 6-8).

**In reference to claims 3 and 6**, Haruyama modified by Matsuda et al. discloses a device and method as stated above where Haruyama discloses the musical sound generator to control the volume of the resonance based on the specific relation between the played key and the first key (column 26 lines 61-65), while Matsuda et al. shows the volume of the resonance to also be based on the position of actuated keys (column 4 lines 8-14).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER UHLIR whose telephone number is (571)270-3091. The examiner can normally be reached on Monday-Friday 8:30am-4:30pm EST.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHRISTOPHER UHLIR/  
Examiner, Art Unit 2832  
December 5, 2009

/Jeffrey Donels/  
Primary Examiner, Art Unit 2832